

ARNOLD ARBORETUM

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Hawthorns. A large number of these trees and shrubs are now in bloom; a few have shed their petals and others will not be in flower for nearly a month. This genus is chiefly confined to eastern North America where it abounds from Nova Scotia to eastern Texas; it is rare in the western part of the continent, and only a few species have been found in Asia and Europe. In 1892, when the second volume of Sargent's *Silva of North America* was published, fourteen species, including one shrub, were described, and in the second edition of Sargent's *Manual of the Trees of North America* published in 1921 there are figures and descriptions of one hundred and fifty-three arborescent species. A few of the larger specimens are growing along the parkway wall between the Jamaica Plain and the Forest Hills entrances, but the greatest part of the collection occupies the eastern slope of Peter's Hill where several hundred species are now established. This collection was begun in 1899, and the discovery and description of most of the species, the raising from seeds here of at least fifty thousand of these plants, and the distribution of most of them to other scientific establishments and gardens in all parts of this country and Europe can perhaps be considered the greatest achievement of the Arboretum in the first half century of its existence. Many of the American species are good garden plants; most of them are hardy in New England, and they grow rapidly into usually round-topped, small trees or shrubs. They flower freely nearly every year; the fruit of many of the species is ornamental, and on a few of them it remains in good condition well into the winter or until spring. Unlike most of the genera of the Rose Family, *Crataegus* shows little or no tendency to hybridize, and among

all the plants which have been raised in the Arboretum during the last twenty-five years no individual which suggests hybrid origin has been noticed. Until the beginning of this century little attention had been paid to these plants by American botanists or gardeners. Some of the species were first named and described from plants cultivated in Europe, and one very distinct and interesting group of small shrubs, the *Intricatae*, named for a plant growing in the Botanic Garden in Copenhagen; of this group ninety species are now recognized and most of them will flower in the Arboretum during the next few days. The species of this group are most abundant in western Massachusetts and in New York, Pennsylvania and Michigan, that is in that part of the country which eighty or one hundred years ago was familiar to the most keen-eyed, industrious and systematic botanists and plant collectors which this country has produced. One hundred and fifty years ago or more, the so-called English Hawthorn, or May, was more often planted here than any of the native species, and it was with this plant that Washington struggled to make a hedge at Mt. Vernon; an excellent gardener, he probably did not realize that the seeds of *Crataegus* do not germinate until they have been allowed to remain for two years in the ground, and as the seedlings did not appear when he expected them he dug up the seed-bed and planted something else.

The two species of western Europe, *Crataegus oxyacantha* and *C. monogyna*, and many of their varieties, are established in the Arboretum. These are the only foreign species which have ever been naturalized in North America where they are now abundant in some parts of Nova Scotia. Forms of this species with scarlet and pink flowers are conspicuous and are the only Hawthorns with colored flowers. The most beautiful, however, of all the foreign Thorns known in the Arboretum is *C. pinnatifida* from eastern Siberia and northern China. The large, deeply divided leaves make this one of the handsomest of the whole genus; the flowers are large and produced in profusion. A form of this species with larger leaves and much larger fruit (var. *major*) is cultivated in orchards as a fruit tree in the neighborhood of Peking. It flowers and produces its fruit here abundantly every year.

One of the earliest, if not the earliest American species to flower, *Crataegus arnoldiana*, was discovered growing wild in the Arboretum on the wooded bank in the rear of the Bussey Institution. It grows also on the banks of the Mystic River in West Medford, Massachusetts, and near New London, Connecticut. This is one of the handsomest of the American Hawthorns and belongs to the Molles Group, which consists of trees distinguished by their large size, large early flowers which usually open with the unfolding of the leaves, and by the large, often edible, scarlet or rarely yellow fruits. That of *C. arnoldiana* ripens late in August or early in September and fruit can be found on other species of the group a little later in the year. There are several species of this tree growing from the valley of the St. Lawrence River in the Province of Quebec to Texas. They now are, however, more numerous in the region west of the Mississippi River and are almost entirely wanting in the southeastern states. In winter this tree is

easily recognized by its upright growth, and distinctly zigzag branches which are more thickly covered with spines than those of many of the related species. At the South Street entrance there are large plants of three other species of this group, *C. mollis* from the Ohio-Illinois region, *C. arkansana* from central Arkansas, and *C. submollis*, a New England and Canada tree. The flowering of all these has passed.

Of other species which have already grown to a large size in the Arboretum and proved desirable garden plants in the old collection near the parkway wall are now a number which are large enough to show their value. Among them are *C. coccinioides*, which is a round-headed tree from the neighborhood of St. Louis, with large flowers in very compact, nearly globose clusters, and large, round, red fruit ripening in the early autumn. In this collection, too, is the Cockspur Thorn, *Crataegus Crus-galli*, which has been more generally cultivated than any other American species, and is now the type of one of the most distinct groups in which the genus has been divided: *C. nitida*, a flat-topped tree with wide-spreading branches and lustrous leaves, comparatively small flowers and abundant fruit; the lustre of the leaves which turn brilliantly in the autumn and the habit of the tree make it one of the handsomest of the Thorns which can be cultivated in this climate. *C. pruinosa*, *C. aprica* and *C. succulenta* are also well represented here, and are good examples of three large and distinct groups. *C. pruinosa* is a small tree with smooth bluish green leaves, large flowers made conspicuous by the large, rose-colored anthers of the twenty stamens and globose fruit, bright green and covered with a glaucous bloom when fully grown and turning scarlet late in the autumn. In all eastern North America there are few Thorns handsomer than this. *C. aprica* is interesting as one of the few hardy representatives of the *Flavae* Group which is entirely confined to the southeastern states with a few representatives ascending into the valleys of the southern Appalachian Mountains. It is not one of the handsomest species of the group for the flowers are not so large as those of many others, and the anthers of the ten stamens are yellow. *C. succulenta* is a showy representative of the *Tomentosae* Group which is one of the handsomest of the northern groups and is especially beautiful in autumn when the branches are covered with large clusters of drooping scarlet fruit. Two black-fruited species here are the *C. Douglasii* from Washington and Oregon, and *C. rivularis* from the Rocky Mountains and the Sierra Nevada. Many of the species in the collection on Peter's Hill are already large enough to show their character and value, especially those of the *Intricatae* Group.

Early Roses. Three interesting Roses are already in bloom. The first, *Rosa Ecae*, less beautiful when in flower than *Rosa Hugonis*, is a native of Afghanistan, where it is common on dry mountain ridges, and of Samarkand, is well worth a place in a collection of Roses for the species with yellow flowers which are hardy in this climate are few in number. *Rosa Ecae* is a spiny shrub with small leaves which are delightfully fragrant throughout the season, and pale yellow flowers not more than an inch and a quarter in diameter.

Rosa Hugonis. Few plants sent from China to our northern gardens equal this rose in grace and beauty. The long arching branchlets are so equally covered with flowers from end to end that the petals touch and make a continuous band of pale yellow. Individual flowers are about two and a half inches in diameter and have a delicate perfume. The leaves are small and pale green. Perhaps no other single-flowered rose is so beautiful, although the Cherokee Rose (*R. laevigata*) another Chinese Rose naturalized in the southern states, has handsomer foliage and larger flowers, but the flowers of the Cherokee Rose are white and not produced in such profusion. *Rosa Hugonis* has become popular in this country in a surprisingly short time and can now be found in quantity in many nurseries.

Rosa omeiensis is also in flower. It is a vigorous shrub with stems covered with prickles and pure white fragrant flowers hardly more than an inch in diameter, borne at the ends of short lateral spikes, and bright red ellipsoidal fruit on stout, elongated, yellow, fleshy stalks and very showy. This Rose is common on the mountains of western China at altitudes of six thousand to eleven thousand feet above the sea, and sometimes grows twenty feet tall and forms great thickets. The name is derived from that of one of the sacred mountains of China, Mt. Omei, where it is common. The largest plant in the Arboretum is in the collection of Chinese shrubs on the southern slope of Bussey Hill with other Roses raised from seed collected by Wilson in western China.

Horsechestnuts and Buckeyes. This is a good time to visit the collection of these trees which are grouped on the right hand side of the Meadow Road. The collection is nearly a complete one and contains all the American species and hybrids but the red-flowered *Aesculus Pavia* from the southeastern states and the Californian species which are not hardy, the two Chinese species and the species from the Himalayas. The original Horsechestnut, *Aesculus Hippocastanum*, is the handsomest of the whole genus and one of the most beautiful trees in the world. It was brought to America at least one hundred years ago and there are many noble specimens in cities and towns of the eastern states. The Himalayan Horsechestnut and the species of central China are not hardy here, and the Arboretum has not succeeded in obtaining seeds of the north China species, *Aesculus chinensis*, which will probably flourish in this latitude.

A new Crabapple. One of the most beautiful when in flower of all the trees which have ever bloomed in the Arboretum is now flowering in the Peter's Hill Group where several species of the American *Malus* are found. It is a double or semi-double form of the American *Malus coronaria* which was found a few years ago in the woods near Waukegan, Illinois, and was named the Charlotte Apple in honor of the wife of the discoverer. The Arboretum plant is still very small but would have been larger if it had not been broken down by boys two years ago. The flowers are fragrant, about two inches in diameter, with two rows of pale pink petals and far handsomer than those of the now well known Bechtel Crab, the double-flowered variety of another American species now in full bloom.